

Serial No.: 10/089,340

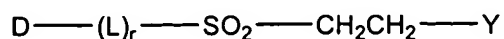
IN THE CLAIMS:

Please amend the claims as follows:

1. (Original) A reactive dye compound comprising:
  - (a) at least one chromophore moiety;
  - (b) at least one SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group which is attached to the chromophore moiety either directly via the sulphur atom of the SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group or via a linking group L;characterised in that at least one SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group is substituted on its terminal carbon atom with at least one Y group wherein Y is derived from a hydrated aldehyde, a hydrated ketone, a hydrated alpha-hydroxy ketone or the hydrated form of formic acid, and linked via one of its oxygen atoms to the terminal carbon of the SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group thereby forming a hemiacetal.
2. (Original) A reactive dye compound according to Claim 1 wherein Y is derived from a hydrated aldehyde or ketone or the hydrated form of formic acid.
3. (Previously presented) A reactive dye compound according to Claim 1 wherein Y is derived from the hydrated form of a reducing sugar selected from an aldose or a ketose, or the hydrated form of formic acid.

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4. (Original) A reactive dye compound according to Claim 3 wherein said aldose is selected from an aldotriose, an aldotetrose, an aldopentose, an aldohexose, an aldohexose, an aldohexose and an aldooctose, and mixtures thereof.
5. (Original) A reactive dye compound according to Claim 4 wherein said aldose is an aldopentose selected from ribose, xylose, arabinose, deoxyribose and fructose, and mixtures thereof.
6. (Original) A reactive dye compound according to Claim 5 wherein said aldose is an aldohexose selected from glucose, galactose, talose, mannose, altrose, allose and rhamnose, and mixtures thereof.
7. (Previously presented) A reactive dye compound according to Claim 1 wherein Y is derived from glucose, sucrose or fructose or the hydrated form of formic acid.
8. (Original) A reactive dye compound according to Claim 3 wherein said ketose is selected from an aldotetrol, an aldopentulose, an aldohexulose, an aldohexulose, and an aldooctulose, and mixtures thereof.
9. (Previously presented) A reactive dye compound according to Claim 1 wherein Y is -O-(CHOH)<sub>4</sub>(CHOHCH<sub>2</sub>OH).
10. (Currently amended) A reactive dye compound having the formula (I):



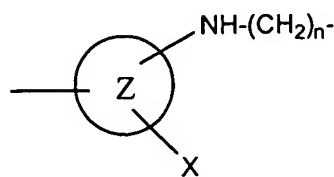
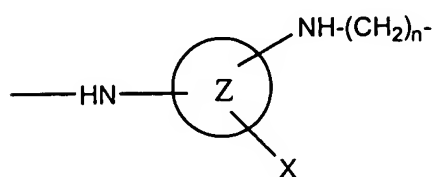
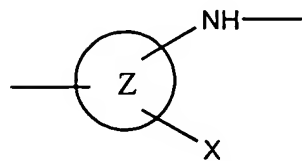
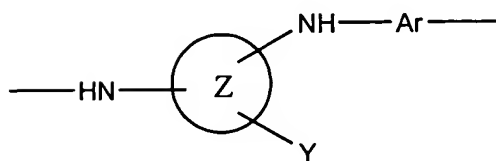
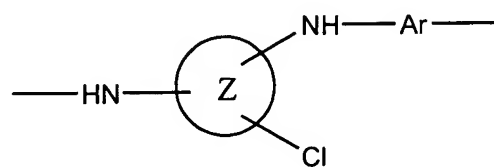
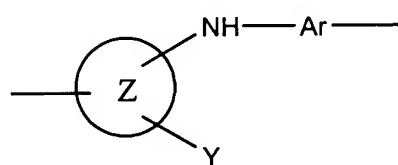
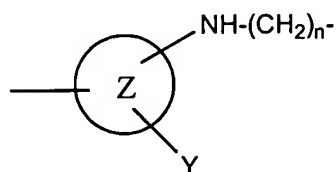
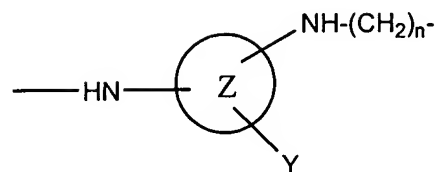
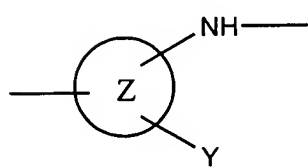
wherein: D is a chromophore group;

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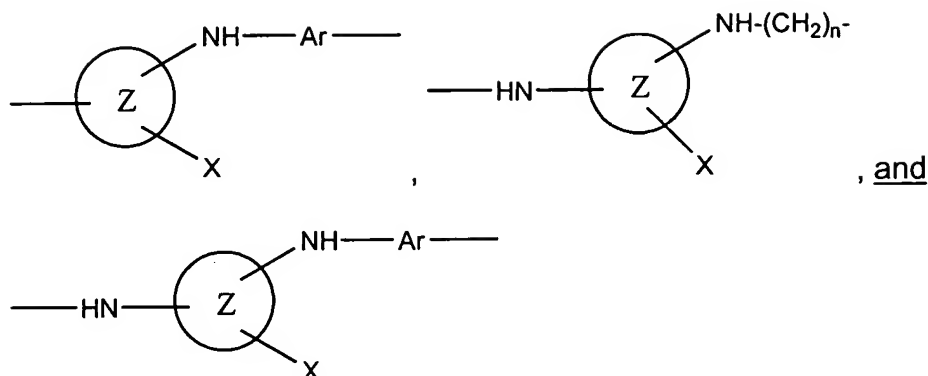
r is 0 or 1

L is a linking group selected from:

NH,  $(CH_2)_n$ ,  $N-(CH_2)_nN$ ,  $-(CH_2)_n-N$ , NR (R is C1-C4 alkyl)



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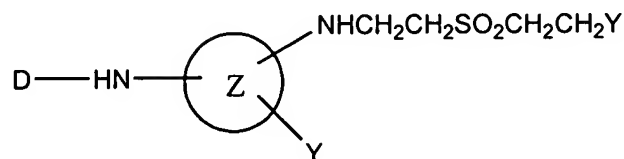
wherein Ar is an aryl group, preferably benzene, Y is as defined above, X is selected from thio-derivatives, halogen (preferably fluorine and chlorine), amines, alkoxy groups, carboxylic acid groups, CN, N<sub>3</sub>, quaternized nitrogen derivatives, (Q<sup>+</sup>)<sub>n</sub>, and oxy- or thio- carbonyl derivatives having the formula -A(CO)R\* wherein A is selected from O or S, where R\* is an organic residue which contains at least one nucleophilic group, wherein the nucleophilic group is preferably selected from OH, NH<sub>2</sub>, SH, COOH, -N=, NHR<sup>1</sup> and NR<sup>1</sup>R<sup>2</sup> wherein R<sup>1</sup> and R<sup>2</sup> may be the same or different and may be selected from C<sub>1</sub>-C<sub>4</sub> alkyl; Z is a nitrogen-containing heterocycle, n is an integer of from 1 to 4;

and salts thereof.

11. (Canceled)
12. (Canceled)

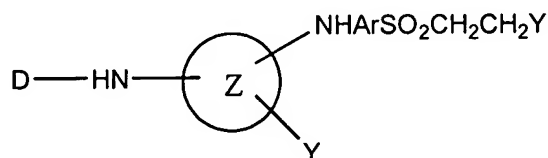
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13. (Currently amended) A reactive dye compound having the structure:



wherein ~~D, Z, and Y are as defined above.~~ D is a chromophore group; Z is a nitrogen-containing heterocycle; and Y is derived from a hydrated aldehyde, a hydrated ketone, a hydrated alpha-hydroxy ketone or the hydrated form of formic acid, and linked via one of its oxygen atoms to the terminal carbon of the SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group thereby forming a hemiacetal.

14. (Currently amended) A reactive dye compound having the structure:



wherein ~~D, Y and Ar are as defined above.~~ D is a chromophore group; Y is derived from a hydrated aldehyde, a hydrated ketone, a hydrated alpha-hydroxy ketone or the hydrated form of formic acid, and linked via one of its oxygen atoms to the terminal carbon of the SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group thereby forming a hemiacetal; and Ar is an aryl group, preferably benzene.

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15. (Currently amended) ~~Use of a compound according to Claim 1 for dyeing cellulosic substrates.~~ A method of dyeing a cellulosic substrate, comprising contacting the cellulosic substrate with a compound according to Claim 1.
16. (Currently amended) ~~Use of a compound according to Claim 1 for dyeing wool.~~ A method of dyeing wool, comprising contacting the wool with a compound according to Claim 1.
17. (Currently amended) ~~Use of a compound according to Claim 1 for dyeing polyamide substrates, preferably nylon.~~ A method of dyeing a polyamide substrate, preferably nylon, comprising contacting the polyamide substrate with a compound according to Claim 1.
18. (Currently amended) ~~Use of a compound according to Claim 1 for dyeing silk.~~ A method of dyeing silk, comprising contacting the silk with a compound according to Claim 1.
19. (Currently amended) ~~Use of a compound according to Claim 1 for dyeing keratin.~~ A method of dyeing keratin, comprising contacting the keratin with a compound according to Claim 1.
20. (Currently amended) ~~Use of a compound according to Claim 1 for dyeing leather.~~ A method of dyeing leather, comprising contacting the leather with a compound according to Claim 1.
21. (Previously presented) Process for the preparation of a compound according to Claim 1 comprising the steps of reacting a first starting

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material with a second starting material, the first starting material comprising at least one chromophore and at least one  $\text{SO}_2\text{C}_2\text{H}_4$  group which is attached to the chromophore group either directly via the sulphur atom of the  $\text{SO}_2\text{C}_2\text{H}_4$  group or via a linking group, the second starting material being a compound containing a suitable Y group.

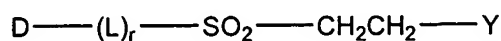
22. (Original) Process according to Claim 21 wherein the reducing sugar is selected from sucrose, glucose and mixtures thereof.
23. (Previously presented) Process according to Claim 21 wherein the process is carried out at a pH of from about 2 to about 8.
24. (Previously presented) Process according to Claims 21 wherein the second starting material is added to the first starting material slowly.
25. (Previously presented) Product obtainable by the process according to Claim 21.
26. (Previously presented) A dye composition comprising the compound of Claim 1 or the product of Claim 21.
27. (Original) A dye composition according to Claim 26 wherein the composition is in the form of a solid mixture and further comprises an acidic or neutral buffer.
28. (Original) A dye composition according to Claim 26 wherein the composition is in the form of a liquid and further comprises water and an acidic or neutral buffer.

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29. (Original) A dye composition according to Claim 26 wherein the composition is in the form of a paste and further comprises water, thickening agent and an acidic or neutral buffer.
30. (Previously presented) A dye composition according to Claim 26 wherein the pH of the composition is in the range of from about 2 to about 5, when an acidic buffer is present, and in the range of from about 4 to about 8 when a neutral buffer is present.

Please add the following new claims:

31. (New) A reactive dye compound having the formula (I):

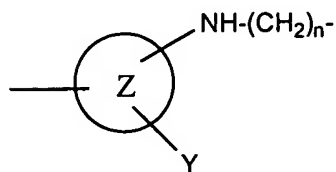
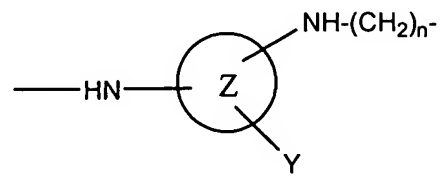
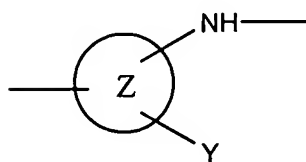


wherein: D is a chromophore group;

r is 0 or 1

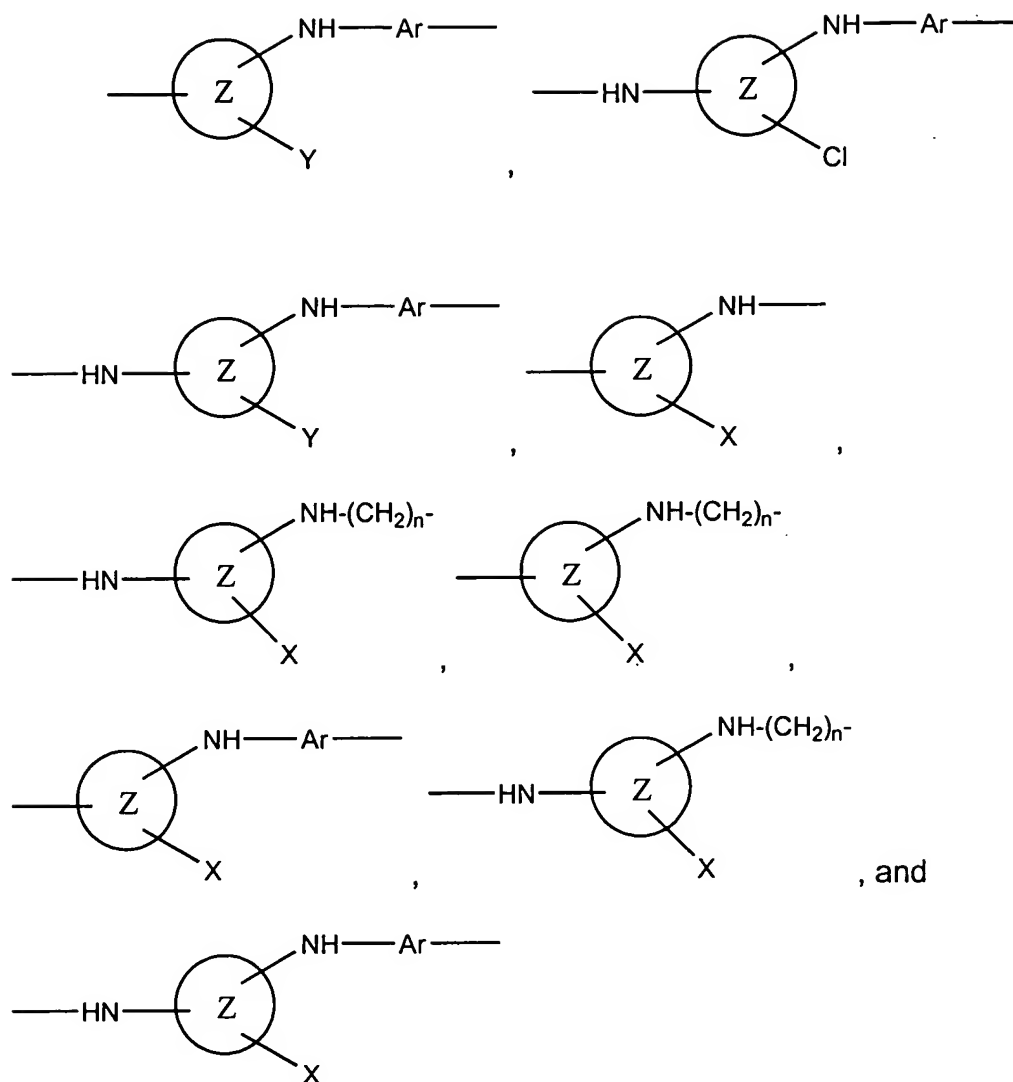
L is a linking group selected from:

NH, (CH<sub>2</sub>)<sub>n</sub>, N-(CH<sub>2</sub>)<sub>n</sub>N, -(CH<sub>2</sub>)<sub>n</sub>-N, NR (R is C1-C4 alkyl)





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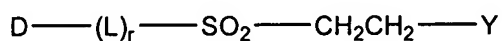


wherein Ar is an aryl group, preferably benzene, Y is derived from a hydrated aldehyde, a hydrated ketone, a hydrated alpha-hydroxy ketone or the hydrated form of formic acid, and linked via one of its oxygen atoms to the terminal carbon of the  $SO_2C_2H_4$  group thereby forming a hemiacetal, X is selected from thio-derivatives, halogen (preferably fluorine and chlorine), amines,

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alkoxy groups, carboxylic acid groups, CN, N<sub>3</sub>, quaternized nitrogen derivatives (Q<sup>+</sup>) and oxy- or thio- carbonyl derivatives having the formula -A(CO)R\* wherein A is selected from O or S, where R\* is an organic residue which contains at least one nucleophilic group, wherein the nucleophilic group is preferably selected from OH, NH<sub>2</sub>, SH, COOH, -N=, NHR<sup>1</sup> and NR<sup>1</sup>R<sup>2</sup> wherein R<sup>1</sup> and R<sup>2</sup> may be the same or different and may be selected from C<sub>1</sub>-C<sub>4</sub> alkyl; Z is selected from triazine, pyrimidine, quinoxaline, pyrimidinone, phthalazine, pyridazone and pyrazine; n is an integer of from 1 to 4; and salts thereof.

32. (New) A reactive dye compound having the formula (I):



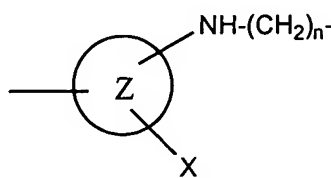
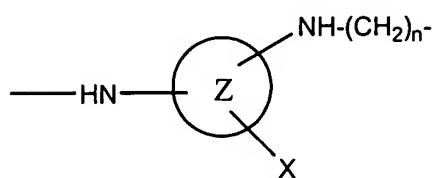
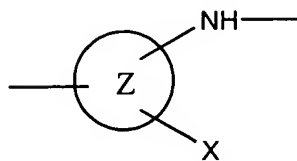
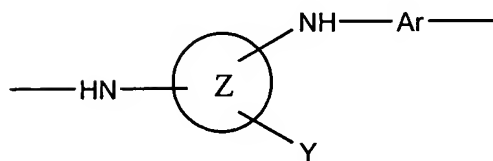
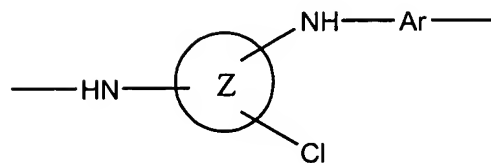
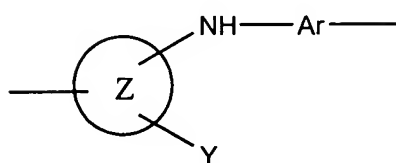
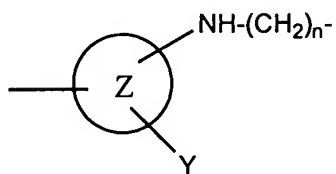
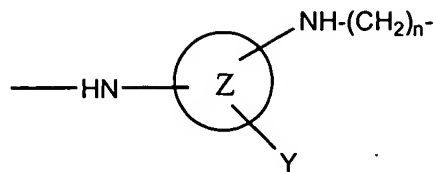
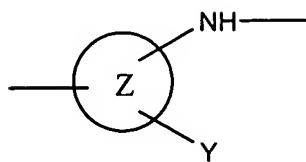
wherein: D is a chromophore group;

r is 0 or 1

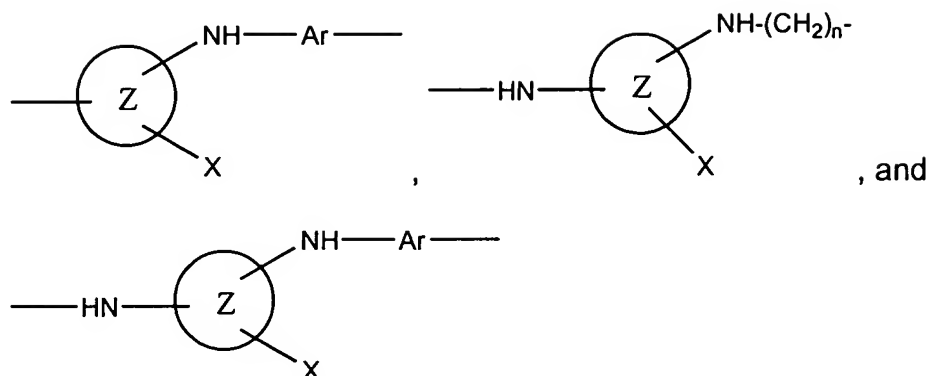
L is a linking group selected from:

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NH,  $(CH_2)_n$ ,  $N-(CH_2)_nN$ ,  $-(CH_2)_n-N$ , NR (R is C1-C4 alkyl)



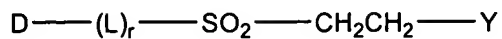
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wherein Ar is an aryl group, preferably benzene, Y is derived from a hydrated aldehyde, a hydrated ketone, a hydrated alpha-hydroxy ketone or the hydrated form of formic acid, and linked via one of its oxygen atoms to the terminal carbon of the SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group thereby forming a hemiacetal, X is selected from halogen (preferably fluorine and chlorine), amines, alkoxy groups, carboxylic acid groups, CN, N<sub>3</sub>, and oxy- or thio- carbonyl derivatives having the formula -A(CO)R\* wherein A is selected from O or S, where R\* is an organic residue which contains at least one nucleophilic group, wherein the nucleophilic group is preferably selected from OH, NH<sub>2</sub>, SH, COOH, -N=, NHR<sup>1</sup> and NR<sup>1</sup>R<sup>2</sup> wherein R<sup>1</sup> and R<sup>2</sup> may be the same or different and may be selected from C<sub>1</sub>-C<sub>4</sub> alkyl; Z is selected from triazine, pyrimidine, quinoxaline, pyrimidinone, phthalazine, pyridazone and pyrazine; n is an integer of from 1 to 4; and salts thereof.

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33. (New) A reactive dye compound having the formula (I):

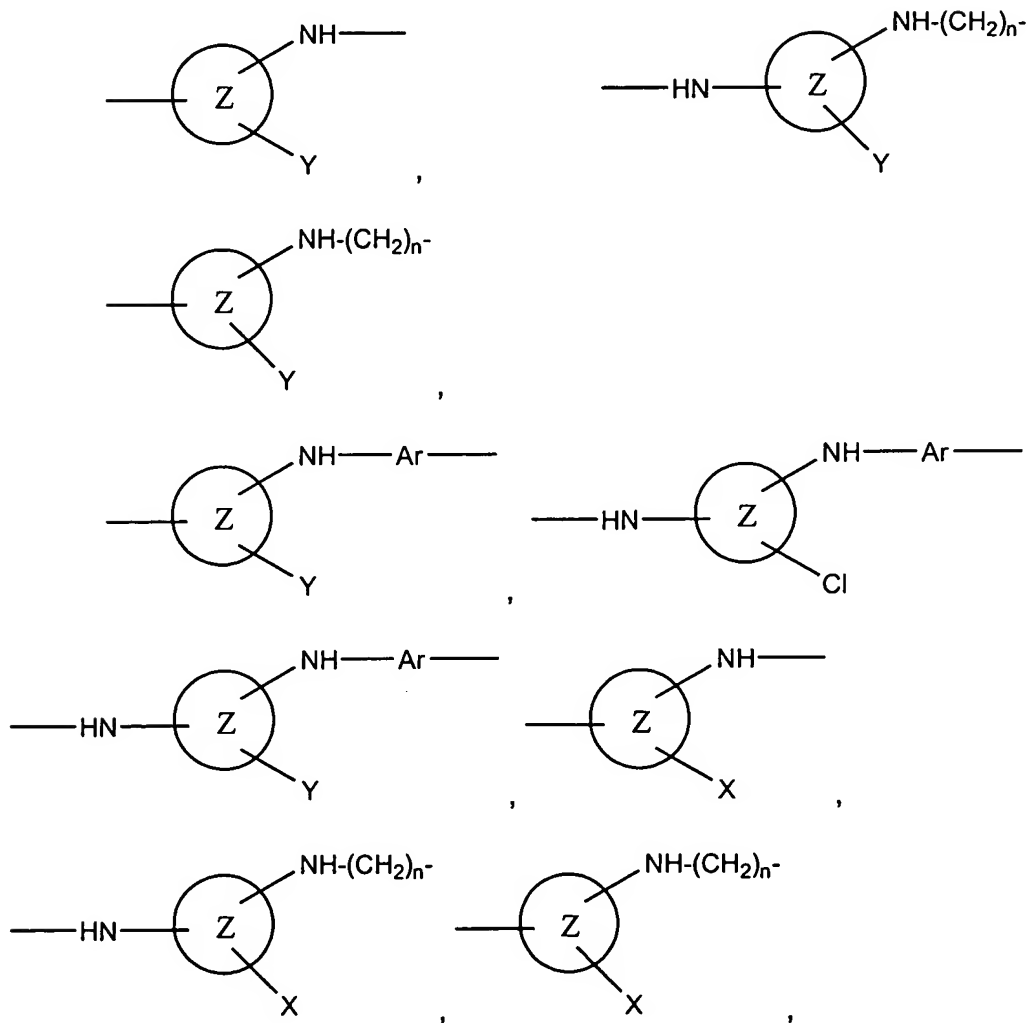


wherein: D is a chromophore group;

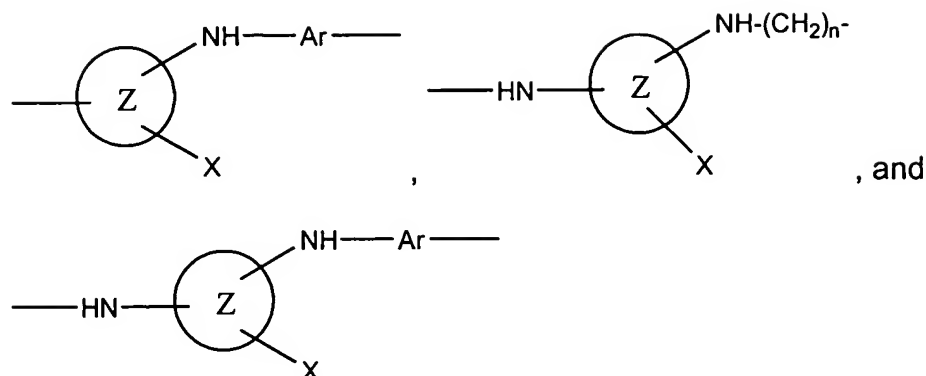
r is 0

L is a linking group selected from:

NH, (CH<sub>2</sub>)<sub>n</sub>, N-(CH<sub>2</sub>)<sub>n</sub>N, -(CH<sub>2</sub>)<sub>n</sub>-N, NR (R is C1-C4 alkyl)



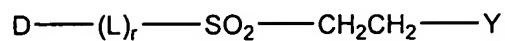
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wherein Ar is an aryl group, preferably benzene, Y is derived from a hydrated aldehyde, a hydrated ketone, a hydrated alpha-hydroxy ketone or the hydrated form of formic acid, and linked via one of its oxygen atoms to the terminal carbon of the SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group thereby forming a hemiacetal, X is selected from thio-derivatives, halogen (preferably fluorine and chlorine), amines, alkoxy groups, carboxylic acid groups, CN, N<sub>3</sub>, quaternized nitrogen derivatives (Q<sup>+</sup>) and oxy- or thio- carbonyl derivatives having the formula -A(CO)R<sup>\*</sup> wherein A is selected from O or S, where R<sup>\*</sup> is an organic residue which contains at least one nucleophilic group, wherein the nucleophilic group is preferably selected from OH, NH<sub>2</sub>, SH, COOH, -N=, NHR<sup>1</sup> and NR<sup>1</sup>R<sup>2</sup> wherein R<sup>1</sup> and R<sup>2</sup> may be the same or different and may be selected from C<sub>1</sub>-C<sub>4</sub> alkyl; Z is a nitrogen-containing heterocycle; n is an integer of from 1 to 4; and salts thereof.

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34. (New) A reactive dye compound having the formula (I):

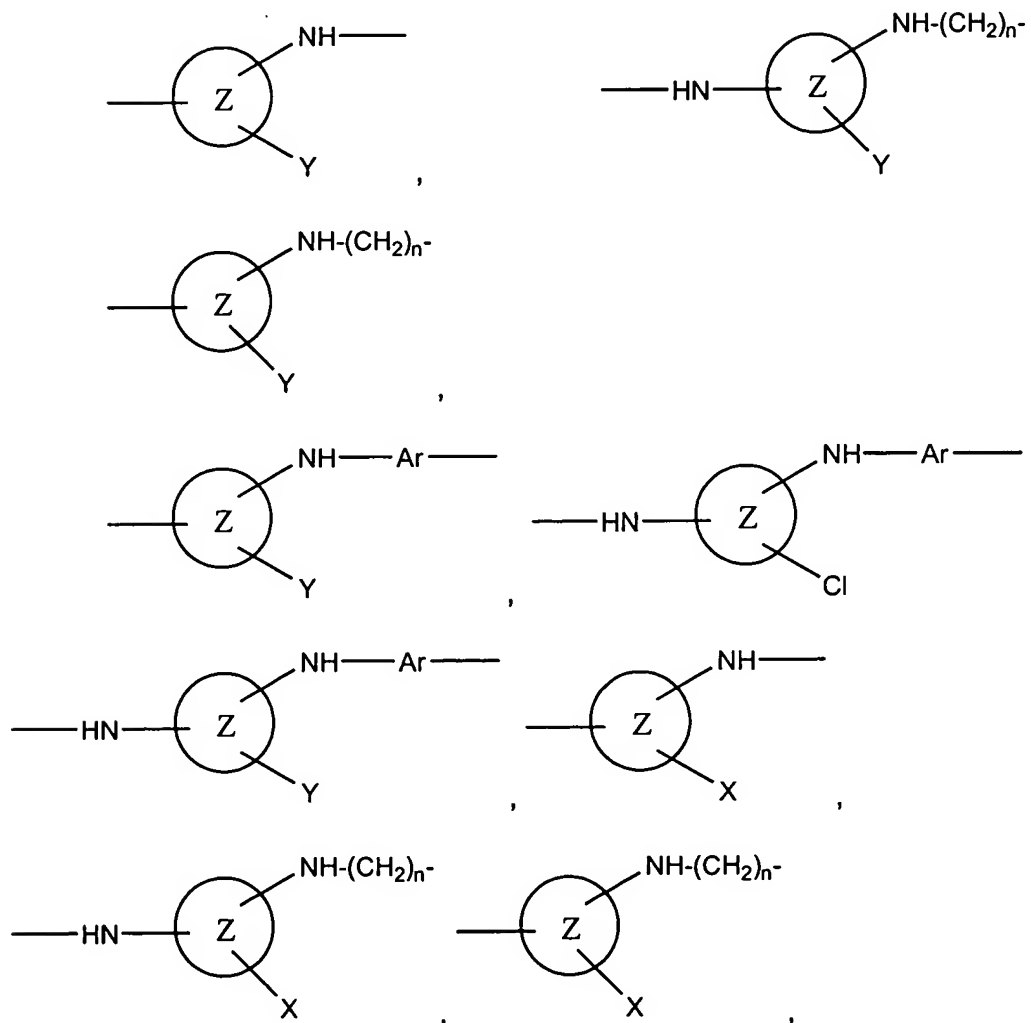


wherein: D is a chromophore group;

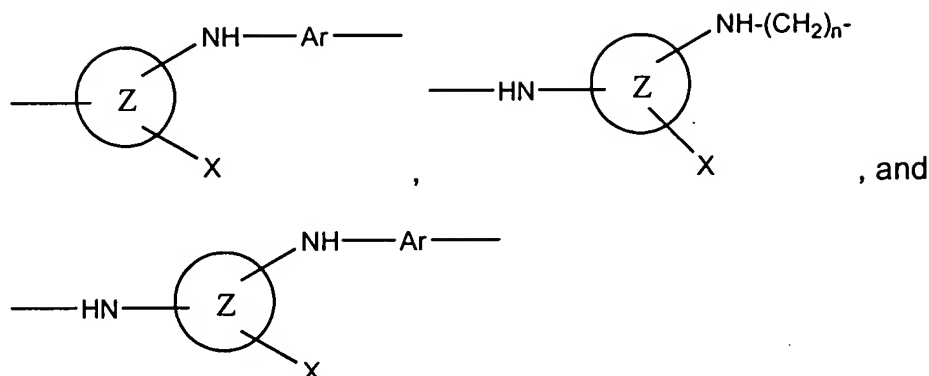
r is 0

L is a linking group selected from:

NH, (CH<sub>2</sub>)<sub>n</sub>, N-(CH<sub>2</sub>)<sub>n</sub>N, -(CH<sub>2</sub>)<sub>n</sub>-N, NR (R is C1-C4 alkyl)



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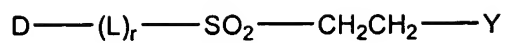


wherein Ar is an aryl group, preferably benzene, Y is derived from a hydrated aldehyde, a hydrated ketone, a hydrated alpha-hydroxy ketone or the hydrated form of formic acid, and linked via one of its oxygen atoms to the terminal carbon of the SO<sub>2</sub>C<sub>2</sub>H<sub>4</sub> group thereby forming a hemiacetal, X is selected from halogen (preferably fluorine and chlorine), amines, alkoxy groups, carboxylic acid groups, CN, N<sub>3</sub>, and oxy- or thio- carbonyl derivatives having the formula -A(CO)R\* wherein A is selected from O or S, where R\* is an organic residue which contains at least one nucleophilic group, wherein the nucleophilic group is preferably selected from OH, NH<sub>2</sub>, SH, COOH, -N=, NHR<sup>1</sup> and NR<sup>1</sup>R<sup>2</sup> wherein R<sup>1</sup> and R<sup>2</sup> may be the same or different and may be selected from C<sub>1</sub>-C<sub>4</sub> alkyl; Z is a nitrogen-containing heterocycle; n is an integer of from 1 to 4; and salts thereof.

35. (New) A reactive dye compound having the formula (I):



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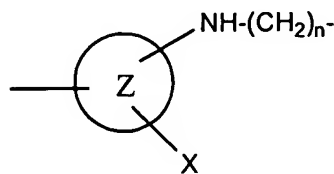
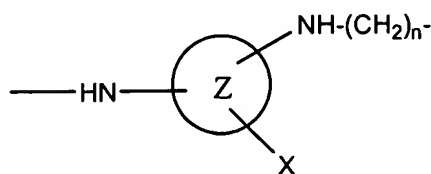
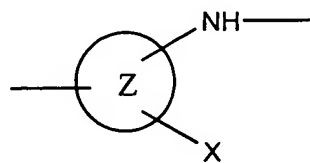
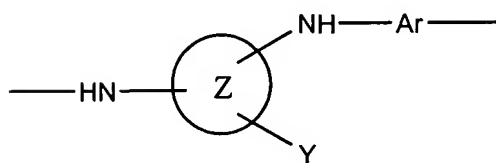
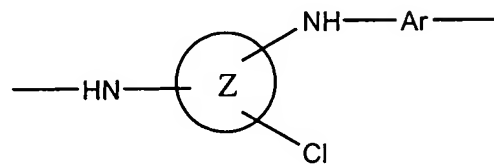
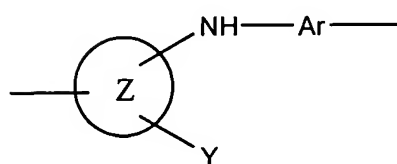
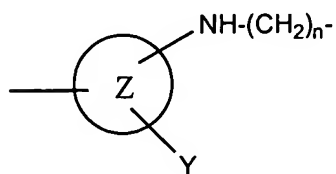
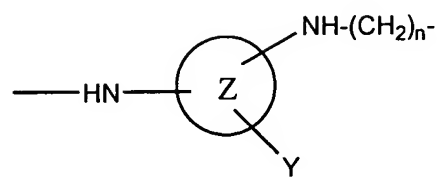
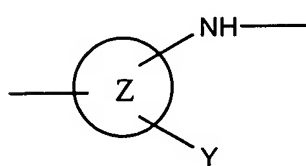


wherein: D is a chromophore group;

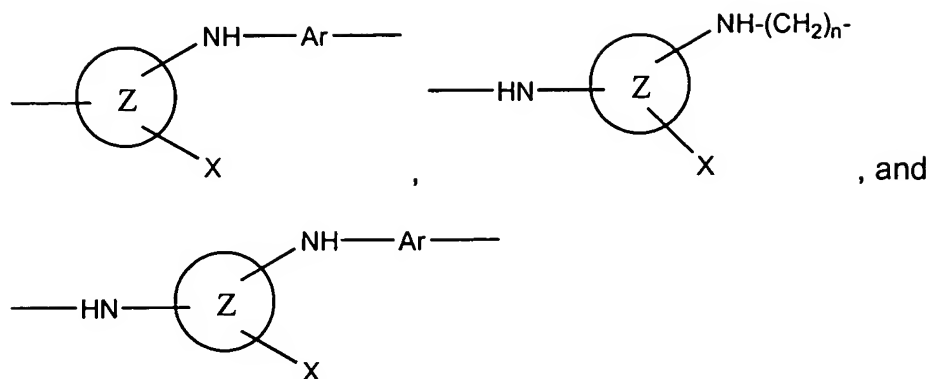
r is 0 or 1

L is a linking group selected from:

NH,  $(CH_2)_n$ ,  $N-(CH_2)_nN$ ,  $-(CH_2)_n-$ , NR (R is C1-C4 alkyl)



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wherein Ar is an aryl group, preferably benzene, Y is as defined above, X is selected from halogen (preferably fluorine and chlorine), amines, alkoxy groups, carboxylic acid groups, CN, N<sub>3</sub>, and oxy- or thio- carbonyl derivatives having the formula -A(CO)R\* wherein A is selected from O or S, where R\* is an organic residue which contains at least one nucleophilic group, wherein the nucleophilic group is preferably selected from OH, NH<sub>2</sub>, SH, COOH, -N=, NHR<sup>1</sup> and NR<sup>1</sup>R<sup>2</sup> wherein R<sup>1</sup> and R<sup>2</sup> may be the same or different and may be selected from C<sub>1</sub>-C<sub>4</sub> alkyl; Z is a nitrogen-containing heterocycle; n is an integer of from 1 to 4; and salts thereof.